World Health Report 2000: how it removes equity from the agenda for public health monitoring and policy

Paula Braveman, Barbara Starfield, H Jack Geiger

University of California, San Francisco Box 0900, 500 Parnassus Avenue, MU3E San Francisco, CA 94143-0900, USA

Paula Braveman *professor of family and community medicine*

Johns Hopkins Medical Institutions, 644 North Broadway, Baltimore, MA 21205, USA

Barbara Starfield *university distinguished professor*

City University of New York Medical School, Department of Community Health and Social Medicine, 138th Street and Convent Avenue, A-109 New York, NY 10031, USA

H Jack Geiger *Logan professor of community medicine, emeritus*

Correspondence to: P Braveman pbrave@itsa.ucsf.edu

BMJ 2001;323:678–81

The *World Health Report 2000* recommends that national health systems be assessed not only by the average health status of a country's population but also by the extent to which health varies within the population.[1] Although we applaud this recommendation, we are concerned that the report's approach to measuring health inequalities undermines efforts to achieve greater equity in health within nations. We argue that the report's measure of health inequalities is not useful for guiding national policy because it provides no information to guide resource allocation or to target policies. In addition, it does not measure socioeconomic or other social disparities in health within countries. When used as a substitute for monitoring social inequalities in health, as its authors implicitly[1] and explicitly[2] recommend, it removes equity and human rights considerations from the routine measurement and reporting of health disparities within nations.

Summary points

- The *World Health Report 2000* measure of health inequality is not useful for guiding national policies
- It does not measure socioeconomic or other social inequalities in health within countries
- It removes equity and human rights considerations from the routine measurement and reporting of health disparities within countries
- The report's measure correlates poorly with other well established indices of social inequality in health

Health and social inequalities

Without studying the report's technical references,[2–4] most readers will assume that health inequalities refer to social inequalities in health. Social inequalities in health are health disparities between population groups defined by social characteristics such as wealth, education, occupation, racial or ethnic group, sex, rural or urban residence, and social conditions of the places where people live and work. These social characteristics are selected for defining population groups and comparing how health and health care vary across the different groups because of their strong and ubiquitous associations with both underlying social advantage and health. The report's official press statements reinforce this assumption.[5]

However, earlier publications by the report's authors stated that their intention was not to measure social inequalities in health but rather the magnitude of differences in health among all individuals in a society, without categorising them into social groups. The intention was to describe the ungrouped individuals solely by how sick or well they are, without regard for other characteristics such as poverty or affluence. Thus the report's measure may reflect the differences in health between the sickest and healthiest people in a country but not between the poorest and richest. Relevant technical arguments have been discussed elsewhere.[2 6]

Guidance of health policy

The measure used in *World Health Report 2000* provides no information to guide resource allocation or target policies. This is because it gives no information about how ill health is distributed socially—for example, whether ill health is more likely to be experienced by the poor or the rich, rural or urban dwellers, or disadvantaged ethnic groups versus others. A minister of health whose country ranked poorly on the report's inequalities measure would have no idea where to begin to look to tackle the disparities.

We have compared the rankings based on the *World Health Report 2000* measure of inequalities in child survival for 44 countries with available data, with rankings on two indices based on World Bank data on socioeconomic inequalities in child survival (see *BMJ*'s website for full details).[7] These two indices, the poor:rich ratio and the concentration index, have been extensively examined and used in the measurement of health inequalities. The poor:rich ratio compares child mortality for the poorest 20% and the wealthiest 20% of a country's population, and the concentration index reflects the extent of inequalities across the entire population, including the groups between the extremes.[7–9] We also examined the absolute difference in child mortality between the poorest and richest groups based on World Bank data. This measure, which is also widely used,[8 9] gave results consistent with

bmj.com

A table with details of rankings for 44 countries is available on the BMJ's website

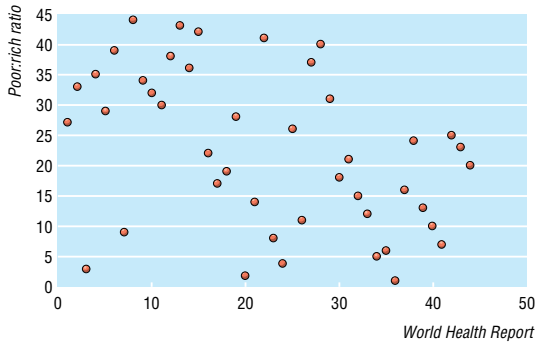


Fig 1 Scatter plot showing correlation between rankings on World Health Report 2000 measure of inequality in child survival and poor:rich ratio in child mortality based on World Bank data (1=least inequality, 44=greatest inequality)

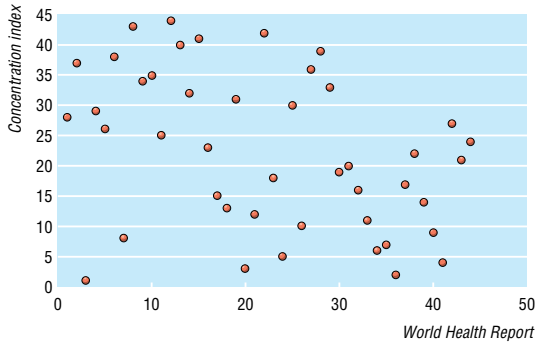


Fig 2 Scatter plot showing correlation between rankings on World Health Report 2000 measure of inequality in child survival and concentration index for socioeconomic inequality in child mortality based on World Bank data (1=least inequality, 44=greatest inequality)

those from the other two indices (results available from the authors on request).

Figures 1 and 2 show the poor correspondence between relative rankings based on the *World Health Report* measure and the poor:rich ratio and the concentration index. Indeed, additional analyses showed modest negative correlations between the report's measure of child mortality inequalities and the accepted measures of socioeconomic inequalities in child mortality (data available from authors on request). Rankings based on the report's inequalities measure correspond moderately well with rankings based on average child mortality (fig 3). This raises questions about the measure's additional contribution to knowledge of the distribution of child health. The failure of the report's inequalities measure to reflect socioeconomic inequalities in health is inconsistent with evidence strongly linking disparities in health with disparities in wealth and factors closely associated with it.[10–15]

Equity and human rights

Because the *World Health Report 2000* does not measure differences in health between different social groups, it effectively removes equity and human rights from the public health monitoring agenda. For example, there are no data to determine whether progress is being made in closing gaps in nutritional status between children in poor and non-poor families, whether racial or ethnic disparities in infant mortality are being reduced, or whether the large sex gaps in child mortality and immunisation rates in many countries are being narrowed. In a world with wide and widening disparities in wealth as well as widespread ethnic conflicts and sex discrimination, these questions should remain on the public policy agenda and be monitored routinely.

Equity is an ethical value that may be operationally defined as striving to reduce systematic disparities in health between more and less advantaged social groups within and between countries.[16–18] Equity does not refer to all health disparities—for example, in the United States, the average birth weight of girls is lower than that of boys, but this disparity is unlikely to reflect inequity. Equity concerns a special subset of health disparities that are particularly unfair because they are associated with underlying social characteristics, such as wealth, that systematically put some groups of people at a disadvantage with respect to opportunities to be healthy. Equity is linked to human rights as it calls for reductions in discrimination in the conditions required for people to have equal opportunity to be healthy.

Importance of WHO leadership on inequality

The WHO has an important influence worldwide on the collection, analysis, and reporting of public health data by countries and international agencies. It defines standards for monitoring health at global, national, and local levels. Without routine monitoring of disparities in health across social groups within a country, governmental and non-governmental institutions cannot be held accountable for achieving greater equity. Although monitoring alone (without advocacy) is certainly not sufficient, it is necessary.

The WHO's leadership is needed to help achieve health systems that are equitable as well as effective, efficient, and of high quality. To provide that leadership the WHO must be seen to be clear about social inequalities in health, their relation to equity and human rights, and the importance of routinely measuring them in a conceptually sound way. We

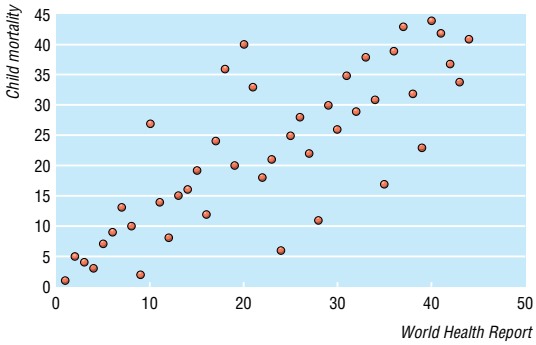


Fig 3 Correlation between rankings of 44 countries based on World Health Report 2000 measure of inequality in child survival and rank according to average child mortality (1=least inequality, 44=greatest inequality)

therefore believe that the approach to health inequalities in the *World Health Report 2000* was ill advised. It should be reconsidered based on open debate among the WHO's member states with input from recognised international experts on measurement of equity and policy.

We thank Catherine Cubbin, for her analytical advice and for doing the analyses showing modest negative correlations between the *World Health Report* measure of inequalities and accepted measures of socioeconomic inequalities; Susan Egerter for help with editing and thoughtful comments on early drafts; and Jennie Kamen for help with the research and creative ideas on presentation of the data. Consultation with Sofia Gruskin was important in clarifying the role of human rights issues.

Competing interests: None declared.

1 World Health Organization. *World health report 2000*. Geneva: WHO, 2000.
2 Murray CJL, Gakidou EE, Frenk J. Health inequalities and social group differences: what should we measure? *Bull World Health Org* 1999;77:537-43.
3 Gakidou EE, CJL Murray, J Frenk. Defining and measuring health inequality. *Bull World Health Org* 2000;78:42-54.
4 Murray CJL, Gakidou EE, Frenk J. Response to P Braveman et al. *Bull World Health Org* 2000;78:234.
5 World Health Organization. World Health Organization assesses the world's health systems. Press release WHO/2000/44. Geneva: WHO, 2000. www.who.int/inf-pr-2000/en/pr2000-44.html (accessed 23 July 2001).
6 Braveman P, Krieger N, Lynch J. Health inequalities and social inequalities in health. *Bull World Health Org* 2000;78:232-4.
7 Gwatkin DR, Rutstein S, Johnson K, Pande RP, Wagstaff A. *Socio-economic differentials in health, nutrition, and population*. Washington, DC: World Bank Health Nutrition and Population, Poverty Thematic Group, 2000.
8 Mackenbach JP, Kunst AE. Measuring the magnitude of socio-economic inequalities in health: an overview of available measures illustrated with two examples from Europe. *Soc Sci Med* 1997;44:757-71.
9 Wagstaff A, Paci P, Van Doorslaer E. On the measurement of inequalities in health. *Soc Sci Med* 1991;33:545-57.
10 Evans RG, Barer ML, Marmor TR. *Why are some people healthy and others not? The determinants of health of populations*. Hawthorne, NY: Aldine de Gruyter, 1994.
11 Kaplan GA, Pamuk ER, Lynch JW, Cohen RD, Balfour JL. Inequality in income and mortality in the United States: analysis of mortality and potential pathways. *BMJ* 1996;312:999-1003.
12 Kawachi I, Kennedy BP. Health and social cohesion: why care about income inequality? *BMJ* 1997;314:1037-40.
13 Macintyre S. The Black report and beyond: what are the issues? *Soc Sci Med* 1997;44:723-45.
14 Marmot MG, Smith GD, Stansfeld S, Patel C, North F, Head J, et al. Health inequalities among British civil servants: the Whitehall II study. *Lancet* 1991;337:1387-93.
15 Victora CG, Barros FC, Huttly SRA, Teixeira AMB, Vaughan JP. Early childhood mortality in a Brazilian cohort: the roles of birthweight and socioeconomic status. *Int J Epidemiol* 1992;21:911-5.
16 World Health Organization, Braveman P. *Equity in health and health care: a World Health Organization initiative*. Geneva: WHO, 1996. (WHO/ARA/96.1.)
17 Braveman P. *Monitoring equity in health: a policy-oriented approach in low- and middle-income countries*. Geneva: World Health Organization Department of Health Systems, 1998. (WHO/CHS/HSS/98.1.)
18 International Society for Equity in Health. www.iseqh.org/workdef.htm (accessed 25 July 2001).

(Accepted 3 May 2001)

Commentary: comprehensive approaches are needed for full understanding

Christopher J L Murray

Evidence and Information for Policy, World Health Organization, 1211 Geneva 27, Switzerland

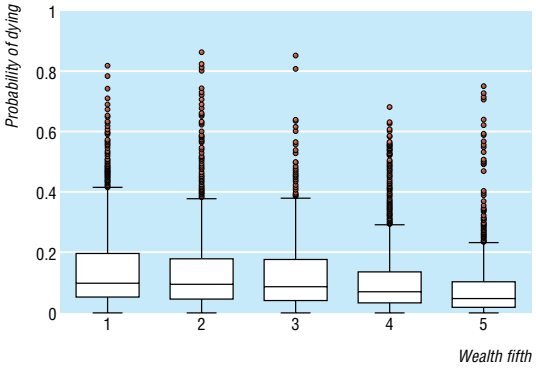
Christopher J L Murray
executive director

murrayc@who.ch

Braveman et al criticise the World Health Organiztion's approach of measuring the full spectrum of health inequalities in a population. They argue for a selective approach in which only health inequalities correlated with factors such as income, social class, or race should matter. Such a selective approach runs counter to the literature on inequality in other disciplines and runs the risk of discouraging scientific inquiry into the causes of inequality.

I will use an example to illustrate the differences between the selective and comprehensive approaches to health inequality. Gakidou and King have estimated the risk of death for each child in 50 countries using household survey data.[1] These risks of death are based on a model that includes a range of sociodemographic variables such as wealth, education, and urban location. In addition, they include an estimate of systematic variation in risk of child mortality not captured by the sociodemographic variables. This can best be thought of as non-random variation in risk due to unmeasured variables. The figure shows the results of their analysis for the Central African Republic. The median risk of death for children is lower in wealthier households. But within each wealth quintile, risk of death varies widely. This variation is systematic or non-random variation in risk of death; it is not simply showing the effects of chance on outcomes.

In the Central African Republic, and all other countries that have been studied, large inequalities exist for risk of death among children and adults at the same ages.[2–4] Some of this variation in the risk of death



Distribution of risk of dying for children aged 0-2 years by fifths of wealth distribution for households in Central African Republic. The horizontal line represents the median, the box around the horizontal line is the interquartile range, and the whiskers show the adjacent values. Outliers are shown as individual points

is correlated with Braveman et al's list of socioeconomic factors such as income, social class, or race. However, community level factors (such as environmental sanitation, water supply, health services, and social norms about risk factors) and household level factors (such as type of housing, infant feeding practices, or birth spacing) also have a role. Genetic factors probably make a small contribution, as do individual's fully informed choices to take health risks such as extreme sports. Many other systematic causes of inequality in health remain unidentified. It is these

multiple causes of variation in risk of death that account for the low correlation between the WHO's comprehensive measures of inequality and indices of wealth differences in child mortality.

What is inequality?

Braveman et al believe that health inequalities correlated with factors other than income, social class, and race are not morally important. Citing themselves, they go further and propose that health inequality is defined as the subset of health inequalities correlated with these socioeconomic factors. For a child with an increased risk of death because she lives in a community with a poor immunisation programme and a high prevalence of HIV, it is no solace to know that her risk of death is uncorrelated with income, social class, or race. To most of us, inequality is the state of being unequal. Health inequalities exist when individuals' risks of death and poor health are unequal. The WHO argues that health inequalities should be measured comprehensively. Health scientists can then help determine the causes of inequality and the policies and programmes that can be used to tackle these causes.

Other disciplines such as economics tend to use comprehensive approaches to measuring inequality rather than selective approaches. When economists study income inequality, they do not simply report differences in average income for social class or race groups. Rather, they measure the entire distribution of income across individuals or households and summarise that distribution with measures such as the Gini coefficient. It then becomes a scientific challenge to determine how much is explained by social class or race.

For health, the WHO has adopted the same approach. Firstly, measure the full extent of health inequality in a population. Secondly, use the tools of science to understand what factors explain this inequality. Thirdly, formulate policies that can act on these causes of inequality. Fourthly, monitor and evaluate the impact of these policies on inequality. With this comprehensive approach, an evidence base can be constructed on the causes of health inequality and the policy options available to tackle it.

Competing interests: None declared.

1 Gakidou E, King G. *A framework for measuring health inequality.* World Health Organization, 1999. (Global programme on evidence for health policy discussion paper series No 5.)
2 Wagstaff A. Socioeconomic inequalities in child mortality: comparisons across nine developing countries. *Bull World Health Organ* 2000;78:19-29.
3 Murray CJL, Michaud C, McKenna M, Marks JM. *US patterns of mortality by county and race: 1965-1994.* Cambridge, MA: Harvard School of Public Health and National Center for Disease Prevention and Health Promotion, 1998.
4 Marmot MG, Smith GD, Stansfeld S, Patel C, North F, Head J, et al. Health inequalities among British civil servants: the Whitehall II study. *Lancet* 1991;337:1387-93.

The need for caution in interpreting high quality systematic reviews

Kevork Hopayian

Seahills, Leiston Road, Aldeburgh IP15 5PL
Kevork Hopayian
general practitioner
k.hopayian@btinternet.com

BMJ 2001;323:681–4

The emergence of systematic reviews raised hopes of a new era for the objective appraisal of evidence available on a given topic. Such reviews promised a synthesis of trial results, which could be conflicting, and an escape from the personal bias inherent in traditional reviews and expert opinion.[1] As the discipline of systematic reviews has evolved, however, two new problems have arisen: the quality of reviews is variable[2 3]; and two or more systematic reviews on the same topic may arrive at different conclusions, raising questions on the validity[4–7] or the relevance[8] of the conclusions. Moreover, adherence to a "checklist" system when appraising trials may overlook important clinical details in the original trials and so reduce the validity of the review. I uncovered this last shortcoming when I recently conducted a study of three systematic reviews; the study is reported here.

Summary points

- The discipline of systematic reviews has given clinicians a valuable tool with which to synthesise evidence
- As the methodology of systematic reviews has evolved, the quality of reviews has improved
- Nevertheless, high quality systematic reviews may overlook important clinical details in the papers reviewed, thereby diminishing their validity
- This shortcoming might be avoided if trials were assessed from a clinician's viewpoint as well as from a reviewer's viewpoint

Background

Guidelines have been drawn up to improve the quality of reviews.[9] Differences in the quality of reviews, however, do not always explain discordance. Jadad and McQuay[4] identified six sets of reviews covering six topics in pain research; despite similar quality scores for reviews in each set, four of the sets contained discordant reviews. Jadad et al[8] identified six generic differences between reviews that might lead to discordance: the clinical question asked; the selection and inclusion of studies; data extraction; assessment of study quality; assessment of the ability to combine studies; and statistical methods for data analysis.